

PATENT CLAIMS

What is claimed is:

1. A process for transferring and releasing substances which are air-sensitive and/or moisture-sensitive and/or light-sensitive, comprising:
 - (a) removing at least one air-sensitive and/or moisture-sensitive and/or light-sensitive substance, after preparation under a protective gas atmosphere, from a synthesis chamber, wherein during said removing, at least one means for protecting said substance surrounds said substance;
 - (b) transferring said substance from said synthesis chamber to at least one test reactor, wherein said transferring occurs in a protective-gas-free environment; and,
 - (c) freeing at least one substance, in the test reactor, from the means protecting said substance, whereas said means protecting said substance remain in the reactor.
2. A process according to claim 1, further comprising activating at least one substance in the test reactor with at least one activator.
3. A process according to claim 1, further comprising modifying at least one substance in the test reactor with at least one moderator.
4. A process according to claim 1, wherein an apparatus provided in the test reactor comprises at least one moving element.
5. A process according to claim 4, the moving element comprises at least one rotating stirring element.
6. A process according to claim 1, wherein said means for protecting said substance comprises plastic or glass.

7. A process according to claim 1, further comprising mechanically destroying said means for protecting said substance with an apparatus provided in the test reactor.
8. A process according to claim 1, further comprising removing said means for protecting said substance by dissolution of said means for protecting the substance in a solvent.
9. A process according to claim 1, in which the substance together with its protective means surrounding it, owing to the overpressure prevailing in a lock, is introduced into the test reactor in such a way that the means protecting it is destroyed directly on impacting the test reactor.
10. A process according to claim 1, wherein the substances comprises an air-sensitive substance which is a catalytically active substance.
11. A process according to claim 10, further comprising introducing at least two catalytically active substances each surrounded by means for protecting said substance, which are identical to or different from one another, into the test reactor.
12. A process according to claim 1, wherein said transferring into the at least one test reactor further comprises transferring with at least one apparatus.
13. A process according to claim 12, further comprising controlling, electronically, said apparatus.
14. A process according to claim 12, wherein said apparatus further comprises at least one electronically-controlled, fully-automatic apparatus, at least one multiport valve pump and at least one multiport valve.
15. A process for transferring and releasing substances which are air-sensitive and/or moisture-sensitive and/or light-sensitive, comprising:

(a) removing at least one air-sensitive and/or moisture-sensitive and/or light-sensitive substance, after preparation under a protective gas atmosphere, from a synthesis chamber;

(b) transferring said substance from said synthesis chamber to at least one test reactor, wherein said transferring occurs in a protective-gas-free environment, and wherein said transferring into the at least one test reactor further comprises transferring with at least one apparatus, and wherein said apparatus further comprises at least one electronically-controlled, fully-automatic apparatus, at least one multiport valve pump and at least one multiport valve.

16. A process according to claim 15, further comprising activating at least one substance in the test reactor with at least one activator.

17. A process according to claim 15, further comprising modifying at least one substance in the test reactor with at least one moderator.

18. A process according to claim 15, wherein the substances comprise an air-sensitive substance which is a catalytically active substance.

19. A process according to claim 18, further comprising introducing at least two catalytically active substances, which are identical to or different from one another, into the test reactor.

20. A process for transferring and releasing substances which are air-sensitive and/or moisture-sensitive and/or light-sensitive, comprising:

(a) removing at least one air-sensitive and/or moisture-sensitive and/or light-sensitive substance, after preparation under a protective gas atmosphere, from a synthesis chamber, wherein during said removing, at least one sealed vessel for protecting said substance surrounds said substance;

(b) transferring said substance from said synthesis chamber to at least one test reactor, wherein said transferring occurs in a protective-gas-free environment; and

(c) freeing at least one substance, in the test reactor, from the sealed vessel protecting said substance.

21. An apparatus for transferring and releasing air-sensitive and/or moisture-sensitive and/or light-sensitive substances, comprising:

(a) a synthesis chamber for preparing an air-sensitive and/or moisture-sensitive and/or light-sensitive substance and enclosing the substance within

(b) means for protecting the substance;

(c) a test reactor;

(d) means for transferring the substance from the synthesis chamber to the test reactor; and

(e) means for freeing, within the test reactor, the substance from the means for protecting the substance, wherein said means are capable of destroying said means for protecting the substance.

22. An apparatus according to claim 21, wherein the synthesis chamber comprises, within the synthesis chamber:

(a) a substance carrier;

(b) substance receiving means, on said substance carrier, for receiving said substance;

(c) a substance metering unit for charging the substance into the substance receiving means;

(d) a carrier which forms a base for the substance carrier; and

(e) a closure apparatus for enclosing said substance within said means for protecting the substance.

23. An apparatus according to claim 21, wherein said means for protecting said substance comprises:

(a) a vessel; and

(b) a gas-tight cover or cover material for sealing said vessel.

24. Apparatus according to claim 21, wherein said apparatus further comprises comprises:

(a) a lock operably linked to the test reactor.

25. An apparatus according to claim 24, wherein said lock comprises:

(a) a lock door for transferring the substance, enclosed within means for protecting the substance, into or out of said lock;

(b) a gas filler port for introducing gas into said lock; and

(c) a gas outlet port for removing gas from said lock.

26. An apparatus according to claim 21, wherein said means for transferring comprises a robot.

27. An apparatus for transferring and releasing air-sensitive and/or moisture-sensitive and/or light-sensitive substances, comprising:

(a) a synthesis chamber for preparing an air-sensitive and/or moisture-sensitive and/or light-sensitive substance and enclosing the substance within;

(b) means for protecting the substance comprising an opening;

(c) a test reactor;

(d) connection lines in fluid connection between the opening and the test reactor; and

(e) means for transferring the substance from the synthesis chamber to the test reactor comprising at least one multiport valve for determining which substance to transfer to the test reactor.

28. An apparatus according to claim 27, wherein said means for transferring comprises a pump in fluid communication between the substance and the test reactor.

29. Apparatus according to claim 21, wherein said means for transferring comprises at least one electronically-controlled, fully automatic apparatus.

30. An apparatus for transferring and releasing air-sensitive and/or moisture-sensitive and/or light-sensitive substances, comprising:

(a) a synthesis chamber for preparing an air-sensitive and/or moisture-sensitive and/or light-sensitive substance and enclosing the substance within

(b) a sealable vessel for protecting the substance;

(c) a test reactor;

(d) an electronically-controlled, fully-automatic apparatus or a robot for transferring the substance from the synthesis chamber to the test reactor.

31. A computer readable data storage medium having computer program code recorded thereon executable by a computer, the computer program code comprising:

a first program code for removing at least one air-sensitive and/or moisture-sensitive and/or light-sensitive substance, after preparation under a protective gas atmosphere, from a synthesis chamber, wherein during said removing, at least one means for protecting said substance surrounds said substance;

a second program code for transferring said substance from said synthesis chamber to at least one test reactor, wherein said transferring occurs in a protective-gas-free environment; and,

a third program code for freeing at least one substance, in the test reactor, from the means protecting said substance.